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Abstracts

[Sources of patent abstracts are cited if they are not from printed copies or official abridgments.]

ORGANIC FIBERS I

Vegetable fibers I 1

COTTON FIBER PROPERTIES. Outer wall of cotton fiber and its influence on fiber properties. Thos. Kerr. USDA & NC Agricultural Expt. Station. *Textile Research J. 16,* 249-54 (June, 1946).

Previous work in this field is briefly reviewed and new information presented to clarify the accepted terminology. A detailed discussion is given concerning the structure of the primary and secondary walls of cotton. LWR TTD:9-46.

COTTON IN NOVELTY FABRICS. Cotton can increase scope in novelty fabric field. Anon. *Am. Wool Cotton Reptr. 60,* No. 26, 43, 45, 47, 49 (June 27, 1946).

The use of long staple cotton, mercerized, to produce a lustrous fabric is compared with that of a synthetic fiber, particularly with reference to the difference in cost. A fancy cotton basket weave, having the feel and sheen of synthetic fabric, is analyzed. TTD:9-46.

COTTON INDUSTRY. What is the cotton industry? Anon. *Textile Weekly 37,* 1202, 1204, 1206 (June 21, 1946).

Results of a survey of the end uses of cotton yarn and woven cotton goods are tabulated in 3 tables. TTD:9-46.

COTTON QUALITY. Determining quality of raw cotton. L. Finch, USDA. *Fibres 7,* 196-7 (July, 1946). Reprinted from *N. Y. Journal of Commerce.*

The system of classifying American cotton is briefly discussed. TTD:9-46.

EGYPTIAN COTTON VARIETIES. Anon. *Textile Weekly 37,* 858 (May 3, 1946).

A new variety, Giza 30, is attracting increasing interest, having a higher lint yield per acre than any other commercially grown variety in the Delta. TTD:9-46.

PROCESSING VEGETABLE FIBERS. Chas. D. Best. USP 2 403 331, July 2, 1946.

By separately processing the heads and stalks of such vegetable fibers as flax, ramie, hemp, and the like, efficiency is increased and less waste of the tow results. TTD:9-46.

BELGIUM FLAX INDUSTRY. Field Information Agency, Technical, Report No. 549; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

COTTON MAGIC. Mildred G. Barnwell. The Jacobs Press, Clinton, S. C.; 1945; 114 pp.; price $2.00.

Reviewed in *Textile Research J. 16,* 395 (Aug. 1946). TTD:9-46.

INFLUENCE OF CARBOHYDRATE LEVELS AND ROOT-SERVICE MICROFLORAS ON PHYMATOTRICHUM ROOT ROT IN COTTON AND MAIZE PLANTS. Frank M. Eaton & Neil E. Rigler, USDA, Plant Industry, Soils & Agricultural Eng. Bur.; 1946; price 10c. (May be ordered from Superintendent of Documents, Washington, 25, D. C.). TTD:9-46.

ITALIAN HEMP INDUSTRY. Field Information Agency, Technical, Report No. 547; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

PREPARATION OF FLAX AND HEMP FIBERS IN GERMANY. Field Information Agency, Technical, Report No. 548; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

USE OF OTHER MATERIALS THAN WOOD OR COTTON AS SOURCES OF CELLULOSE. Field Information Agency, Technical, Report No. 490; price 2s 7d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

Animal fibers I 2

WOOL LUBRICANT. Special characteristics of self-scouring wool lubricant. A. Moscowitz, L. Sonneborn Sons, Inc. *Am. Dyestuff Reptr. 35,* 310-11 (June 17, 1946).

The combination of surface active characteristics and lubricating properties in a wool lubricant is discussed. TTD:9-46.

WOOL RESEARCH. Wool Industries Research Ass'n. Anon. *Fibres 7,* 191-3 (July, 1946).

The past and present work of the Association is briefly surveyed and its future objectives noted. Five photomicrographs of wool fibers. TTD:9-46.

SWELLING KERATIN FIBERS. John B. Speakman (to Perm, Ltd.). USP 2 400 377, May 14, 1946.

A permanent set or curl may be given to keratin fibers such as wool or hair, along with a consequent relaxation of stress, by treatment with a bisulfite solution and an alcohol (10-45 wt.%) at about pH 4.
TTD:9-46.

KERATIN FIBER TREATMENT. Wm. J. Burke (to E. I. du Pont de Nemours & Co.). USP 2 403 906, July 16, 1946.

A permanent set, with consequent reduced tendency to shrink, is imparted to keratin fibers, such as wool and hair by treatment with an alkaline solution (pH 5.0-6.5) of a monomeric N-(acylthiomethyl) carbonamide.
TTD:9-46.

MANUFACTURE OF NONWOVEN OR COMPRESSED WOOLEN FELT IN GERMANY. Field Information Agency, Technical, Report No. 472; price 1s 7d.

Listed in *Govt. Publications* (*Great Britain*) (June, 1946). TTD:9-46.

Artificial fibers I 3

RAYON PULP dissolved by new methods. Anon. *Am. Wool Cotton Reptr. 60,* No. 24, 11, 47-8 (June 13, 1946).

Early prejudices against rayon are recalled. The introduction of Western hemlock and Southern pine for dissolving pulps is discussed. TTD:9-46.

ARTIFICIAL FILAMENTS. Donald L. Wilson (to Courtaulds, Ltd.). USP 2 399 970, May 7, 1946.

Artificial filaments are produced from an aqueous solution of polyvinyl alcohol by extrusion into an acetone coagulating bath, passing through a bath of diethylene glycol monoethyl ether and water (50%), winding, and drying at 60°C. TTD:9-46.

CELLULOSE ACETATE. John E. Jones (to British Celanese, Ltd.). USP 2 401 304, June 4, 1946.

Cellulose acetate is produced by acetylating cellulose with acetic anhydride in glacial acetic acid, with H_2SO_4 as catalyst. TTD:9-46.

DRYING VISCOSE RAYON. Kenneth M. McLellan (to Industrial Rayon Corp.). USP 2 403 819, July 9, 1946.

By an improved system of air intake and exhaustion viscose rayon thread, as it is withdrawn from the coagulating bath and taken up on a reel, is subjected to a continuous and uniform drying treatment.
TTD:9-46.

TEXTILE FIBER TREATMENT. Jos. E. Smith (to Can. Industries, Ltd.). Can. P. 435 937-9, July 23, 1946.

A textile fiber finishing composition consists essentially of an ester gum, a polyvinyl acetate, and an aluminum salt. TTD:9-46.

GERMAN RAYON AND STAPLE FIBER AND ALLIED ENGINEERING INDUSTRY. Brit. Intelligence Objectives Subcommittee Report No. 428; price 7s 3d.

Listed in *Govt. Publications* (*Great Britain*) (June, 1946). TTD:9-46.

REPORT ON MACHINERY FOR MANUFACTURE OF VISCOSE AND SPINNING OF CONTINUOUS FILAMENT AND STAPLE FIBER YARN IN GERMANY. Brit. Intelligence Objectives Subcommittee Report No. 454; price 3s 2d.

Listed in *Govt. Publications* (*Great Britain*) (June, 1946). TTD:9-46.

CASEIN FIBERS in production of felt hats. A. G. Arend. *Fibres 7,* 194-5 (July, 1946).

The extensive wartime use in hats of casein fibers, with their close resemblance to wool, is noted. Suitable mixtures, thicknesses (10-30 microns), and staple lengths (¼-1") of the fibers are discussed, particularly with reference to their continuing use in felt hat manufacture. TTD:9-46.

PROTEINS as industrial raw materials. A. K. Smith, Northern Regional Research Laboratory. *Chem. Industries 58,* 974-7 (June, 1946).

In a review of the development and of the many uses of proteins (glues, gelatins, paper coating, plastics, synthetic fibers, paints, and insecticides) the production of synthetic fibers from milk casein (e. g. Aralac) is briefly described. TTD:9-46.

PROTEIN FIBERS. Geo. S. de Kadt (vested in Alien Property Custodian). USP 2 398 625, Apr. 16, 1946.

Protein fibers, especially casein, are produced in a spinning bath, with a pH about 3.4, containing lactic acid 5%, sodium lactate 5%, and $MgSO_4$ 15%.
TTD:9-46.

PROTEIN FIBERS. Robt. A. Boyer, Wm. T. Atkinson & Chas. F. Robinette (to Ford Motor Co. of Canada, Ltd.). Can. P. 435 985, July 23, 1946.

Protein fibers are spun from a spinning solution containing 90 g. soy protein, 15 ml. NaOH (1.3 sp. gr.), 350-400 ml. water, 3 ml. xanthate. TTD:9-46.

PROTEIN FIBERS. Maria G. Ter Horst, Can. P. 436 444; Lambertus A. van Bergen, Can. P. 436 445 (to Cooperative Condensfabriek "Friesland"), Aug. 13, 1946.

Protein fibers, filaments, threads, and the like are formed by extruding a protein solution, containing less than 0.3 mol free alkali, into a coagulating bath and hardening. TTD:9-46.

Synthetic fibers I 4

NYLON YARN. Present nylon situation. Warren A. Beh, E. I. du Pont de Nemours & Co. *Rayon Textile Monthly 27,* 353-4 (July, 1946).

The production of nylon yarn, particularly for hosiery,

is discussed. Nylon staple fiber is a new factor to be considered; its use in blends is predicted.
TTD:9-46.

VINYON HATS. Anon. *Textile Age 10,* No. 5, 98 (May, 1946).

A plastic felt hat (of wool combined with Vinyon) is described as light and impervious to water.
TTD:9-46.

VINYL RESIN FIBERS. Albert F. Smith (to E. I. du Pont de Nemours & Co.). USP 2 403 464, July 9, 1946.

Oriented fibers of hydrolyzed interpolymers of ethylene with a vinyl organic ester, which are of use for hosiery yarn, weaving, felts, pile fabrics, cordage, fish line, etc., are rendered water insensitive by treatment with a solution of N,N-bis(methoxymethyl)urea.
TTD:9-46.

VINYL RESIN FIBERS. Kenneth L. Berry & Julian W. Hill (to E. I. du Pont de Nemours & Co.). USP 2 405 008, July 30, 1946.

In order to reduce the heat shrinkage, at the same time increasing the tensile strength, vinyl resin fibers, films, foils, etc., are heat-treated under tension at progressively decreasing temperatures (up to 150°C) in the presence of a curing agent (0.1-15%, based on the weight of the polymer) such as Na_2S. TTD:9-46.

POLYTHENE THREADS. G. Loasby (to Imperial Chemical Industries of Australia & New Zealand, Ltd. through Brit. Nylon Spinners, Ltd.). Australian P. 121 825, Aug. 8, 1946.

Artificial threads, filaments, etc., are extruded from molten polythene at 200-350°C into a cooling chamber, and wound. TTD:9-46.

Fiber applications I 5

INSULATED WIRE. Aaron Rosenstein & Harry Dolan (to Rosenstein Bros.). USP 2 405 057, July 30, 1946.

In the manufacture of insulated wire, usually copper, a freshly extruded nonelastic artificial thread is wound upon an elastic (rubber, gutta percha, cellulose acetate, phenolic resin, etc.) wrapping on the wire, or the elastic covering may be applied over the nonelastic. This insulating process is carried out as a continuous operation and effects a considerable saving over the present methods of separately manufacturing the textile and rubber coverings. TTD:9-46.

INORGANIC FIBERS II

ASBESTOS LAMINATES. Robt. G. Quinn (to Johns-Manville Corp.). USP 2 401 314, June 4, 1946.

A reenforced fire- and heat-resistant asbestos paper laminate of high tensile and tear strength, useful as heat insulation, is composed of coarse mesh woven

scrim between facing sheets of asbestos fibers tightly bonded together. TTD:9-46.

MINERAL WOOL. Carl G. Muench (to Celotex Corp.). USP 2 403 740, July 9, 1946.

In the manufacture of mineral wool from molten slag the lighter fiber particles are separated from the unfiberized particles, shot, under the influence of high pressure steam or air. TTD:9-46.

ASBESTOS ROOFING MATERIAL. Isidor Supack. USP 2 404 994, July 30, 1946.

A roofing material that is water- and heat-proof is composed of asbestos fiber layers with an internal reenforcing wire mesh covered with outer layers of asphalt. TTD:9-46.

GLASS FABRIC BONDING. Howard W. Collins (to Owens-Corning Fiberglas Corp.). USP 2 404 904, July 30, 1946.

Glass fabrics may be tightly bonded to metal, ceramics, asbestos, glass, etc., by first coating the solid article with vitreous enamel then (preferably) applying frit to the contacting surface of the glass fabric and heating to a temperature somewhat below the critical temperature of the glass fabric so that there will be only a partial fusion of the glass fibers with the enamel.
TTD:9-46.

HEAT INSULATION. Willard D. Ryder. USP 2 405 330, Aug. 6, 1946.

Heat insulation, particularly for pipes, consists of 1 or more layers of an inorganic fibrous material (e. g. glass wool, fiber glass, rock wool, mineral wool, etc.) containing, preferably, a binder or filler (such as a synthetic resin, mineral oil, etc.), overlaid with an adhesive moisture-resistant coating. TTD:9-46.

YARN TWISTING. Eugene C. Gwaltney & Henry R. Marsh (to Saco-Lowell Shops). USP 2 405 885, Aug. 13, 1946.

In twisting yarn, particularly on a 2 for 1 machine, an accurate control of the tension between the supply body and the flyer (to govern the size of the balloon) is maintained by an improved tension device, which is easily removed to clean accumulations of lint and fly.
TTD:9-46.

GLASS FIBER INSULATION. C. E. Binns & S. Palmer (to Versil, Ltd.). Australian P. 121 818, Aug. 8, 1946.

Insulation sheet material is composed of layers of mica and glass fibers tightly bonded together.
TTD:9-46.

ASBESTOS FIBER LAMINATE. Gilbert E. Ayers. Can. P. 436 029, July 30, 1946.

A fire-resistant laminated material consists of outer layers of asbestos fiber cloth glued to cemented wood plies. TTD:9-46.

ROCK WOOL. E. M. Guppy & Jas. Phemister, His Majesty's Stationery Office, London; 1945; 46 pp.; price 9d.

Reviewed in *Chem. Eng. News 24,* 1730-1 (June 25, 1946). TTD:9-46.

FIBER TO YARN III

Fiber preparation III 1

CARDING. Recent improvements to cotton cards and combing machines. Anon. *Textile Recorder 64,* No. 759, 43-4 (June, 1946).

A slow motion device for doffers, that permits running at half-speed in order to piece up the web, and weight-relieving mechanism for a Nasmith comber, which aids in preventing the formation of flats while machine is stopped, are described and illustrated. TTD:9-46.

CLEANING COTTON. Studies on cleaning cotton. Frederick T. Peirce, N. C. State Textile School. *Am. Wool Cotton Reptr. 60,* No. 25, 13-14 (June 20, 1946).

Experiments separating trash from lint by means of an air current are discussed. By this process, elimination of carding is possible and at the same time a cleaner fiber may be obtained. TTD:9-46.

DRIVING FLATS ON CARDS. Anon. *Textile Weekly 37,* 906, 908 (May 10, 1946).

In an alternative method for setting, slow grinding, and cleaning the flats are driven directly from the doffer cylinder (with main cylinder stopped) or indirectly from the doffer cylinder through the main cylinder, hand crank methods being thus eliminated. The essential features of this method are embodied in British P. 572 560 (T. H. Parker). TTD:9-46.

IMPROVED WOOL CARDING suggested by expert. Anon. *Am. Wool Cotton Reptr. 60,* No. 26, 77-82 (June 27, 1946).

A number of suggested improvements in wool cards while expensive are applicable to existing machines: the scale pan set at an angle or bias, a Boullette condenser, similar to the tape condenser, which would eliminate a comb, a 40" metallic breast, variable speed drives, and others. TTD:9-46.

MECHANICAL BLENDING proves effective for wool. Gustav Zellnik. *Textile World 96,* No. 5, 123, 125, 200, 202 (May, 1946).

Mechanical blending of wool (with cotton, rayon, asbestos, jute, etc.) is discussed and 3 different methods described (the simple layer blending, a fully automatic, and the Cleveland). The Proctor Super Picker is illustrated. TTD:9-46.

SPUN NYLON-RAYON challenges cotton mills. P. M. Thomas. *Textile World 96,* No. 5, 141, 194, 197 (May, 1946).

In running nylon and rayon blends on cotton mill machinery 40-60% slower picker beater speeds are recommended. TTD:9-46.

SYNTHETIC BLENDS and worker tests explored by STA men. Anon. *Textile World 96,* No. 5, 143, 197-8, 200 (May, 1946).

The sandwich method of blending synthetic fibers is common. The highest breaking strength is obtained with 2" staple. In tinting, 1½ lbs. of fugitive tint are recommended for each lap of 45 lbs. Pre-employment tests are briefly discussed. TTD:9-46.

DECORTICATOR. Karl Kaiser (to California Central Fiber Corp.). USP 2 399 809, May 7, 1946.

An improved portable decorticator, intended particularly for flax but also for ramie, hemp, jute, crotalaria and other bast fibers, has a number of light-weight high-speed brake rolls that by means of a snap action on the flax stalks efficiently separate and remove the shive. TTD:9-46.

DRAFTING COTTON. Arthur Crossley (to Wauregan Mills, Inc.). USP 2 404 218, July 16, 1946.

Instead of 2 or more frames, a single drawing frame employing a high-draft system draws cotton slivers in a continuous operation, thus eliminating certain packaging operations. TTD:9-46.

Spinning III 2

MULE SPINNING. Spintech. *Textile Weekly 37,* 868, 870, 872 (May 3, 1946).

Various details concerned with the operation of a mule are discussed. Attention to such matters as quadrant setting, strapping motion, mule squaring, resetting the unlocking bracket, etc., help in attaining efficient operation. TTD:9-46.

RING SPINNING TECHNIQUE. R. Stockton. *Textile Weekly 37,* 1158, 1160, 1162 (June 14, 1946).

Methods of calculating ring spinning efficiency are discussed and illustrated with examples. The speed of a ring frame is better evidenced by drafting rate (inches delivered per minute by the front roller) than by spindle speed (rpm). TTD:9-46.

RING DOUBLING. Arthur Davenport. USP 2 405 410, Aug. 6, 1946.

On a ring doubling frame, particularly for artificial silk yarns, a pulley having a wire-shaped zig-zag groove (instead of grooved rollers) guides the yarn from the bobbins of the creel to the winding bobbins. TTD:9-46.

TWISTER-SPINDLE. John A. Kennedy (to Saco-Lowell Shops). USP 2 405 889, Aug. 13, 1946.

In spinning, twisting, and winding operations an improved adjusting device permits quick and easy adjustment of the spindle for height gradations relative to the yarn guide. TTD:9-46.

PRODUCTION OF SPINNING AND PREPARATORY TEXTILE MACHINERY. DEUTSCHE SPINNEREI-MASCHINEN-BAU A. G. INGOLSTADT, OBB. Field In-

formation Agency, Technical, Report No. 467: price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

PRODUCTION OF SPINNING, TWISTING, AND PREPARATORY TEXTILE MACHINERY. Field Information Agency, Technical, Report No. 470; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

Winding III 3

WINDING MACHINERY. High speed pirn and weft winding machinery. Anon. *Textile Recorder 64,* No. 759, 47-8, 58 (June, 1946).

Among the machinery shown at the Basle fair are a Giromat automatic pirn winder, a Girocopser nonautomatic pirn winder and a Bruegger winder, which are described in some detail and illustrated. TTD:9-46.

YARN WINDING. Theodor E. Carlson (to Celanese Corp. of Am.). USP 2 403 908, July 16, 1946.

In winding yarn on a bobbin a transfer tail or magazine warp is applied with the bobbin rotating at high speed and without a sudden increase in tension. TTD:9-46.

THREAD REEL. Richard W. Stanley & Wm. B. Lowe (to Am. Viscose Corp.). USP 2 404 005, July 16, 1946.

A thread advancing reel has a receiving surface connected to its discharge end which prevents the thread accumulation from tangling or interfering with the operating parts. TTD:9-46.

RAYON WINDING. Jas. J. Polak & Arthur L. Jackson (to Am. Enka Corp.). USP 2 404 742, July 23, 1946.

By an improved method freshly spun viscose rayon yarn is wound in a slowly rotating can under substantially no tension into a package (of 10 lbs. or more), which is highly permeable and may therefore be readily washed, and after-treated in the can in a relatively short time. TTD:9-46.

YARN WINDING. John L. Hall & Angelo M. Santolla (to Celanese Corp. of Am.). USP 2 404 838, July 30, 1946.

A package-size control gage, positioned on the traverse frame dog at an angle to the traverse bar automatically stops the winding machine at a predetermined package size. TTD:9-46.

WINDING YARN. Walter V. Jacobson (to Universal Winding Co.). USP 2 405 215, Aug. 6, 1946.

On a yarn winder bobbins are continuously wound at high speed by means of a rotary cam acting directly on the yarns to traverse them on the bobbins without

the use of reciprocating yarn guides and other elements subject to wear at high speeds. TTD:9-46.

SPINDLE. Robt. Hargreaves & Jas. Youngsma (to Whitin Machine Wks.). Can. P. 436 284, Aug. 6, 1946.

A spindle has a vertically adjustable plate for supporting a yarn package. TTD:9-46.

Yarn processing III 4

YARN CONDITIONING. Robt. D. MacLaurin (to Industrial Rayon Corp.). USP 2 404 240, July 16, 1946.

Yarn, particularly cellulosic, treated with a composition of a mineral oil and an ester of a higher polyhydric alcohol has a low uniform friction and after winding on combs has little or no tendency to bulge out of shape. Example of a thread conditioning composition: No. 15 technical white oil 45%, mineral seal oil 45%, sorbitan trioleate 7½%, castor oil 2½%. TTD:9-46.

YARN TREATMENT. Wm. J. Elvin & John B. Steiding (to Camille Dreyfus). Can. P. 435 876, July 16, 1946.

Adjustable reels avoid excessive tension on yarns during treatment. TTD:9-46.

YARN DRYING. Martin Castricum (to Dominion Rubber Co., Ltd.). Can. P. 436 087, July 30, 1946.

A dryer consists of a heated tube through which yarns or cords are drawn under tension in a long spiral path. TTD:9-46.

Yarn products III 5

RAYON TIRE CORD. Some technical aspects of use of high-tenacity viscose process rayon in tires. W. Wycliff Owen, E. I. duPont de Nemours & Co. *India Rubber World 114,* 515-20 (July, 1946).

The viscose process, the only one used for high-tenacity tire yarn, which has about twice the strength of regular textile rayon, is briefly reviewed. The twisting of the yarn into cord and the processing of the cord into tires are described and a ring twisting machine illustrated. The physical properties of rayon cord particularly strength, denier, and gage are described and compared with cotton cords. TTD:9-46.

Yarn applications III 6

BRUSHES. Geo. H. Fullerton & Theron V. Moss. USP 2 403 652, July 9, 1946.

Brushes, particularly rotary brushes, are made from a twisted cord of fibrous or other material (e. g wire) with a stitched net-like envelope, the whole impregnated with a binder. TTD:9-46.

YARN TO FABRIC — IV

YARNS FOR FABRICS. O. Glaessner. *Textile Weekly 37,* 1006, 1008, 1010 (May 24, 1946).

A wide variety of counts is not necessary for a big variety of fabrics. Closer coöperation between spinner and weaver is urged in the interest of efficiency. The denier system is considered to have an advantage over the count system. TTD:9-46.

Warp sizing — IV 2

WARP SIZING. Some notes on warp sizing. Jimmy Walker. *Cotton* (Atlanta) *110,* No. 6, 75-7 (June, 1946).

Kettles, coils agitation, cooking size, yarn sticking, and size foaming are among the warp sizing problems briefly discussed. TTD:9-46.

WARP SIZING RAYON. Allen R. Fuller (to A. E. Staley Mfg. Co.). USP 2 403 515, July 9, 1946.

Rayon yarn is sized, preparatory to weaving, with xylan together with a wetting agent, and sulfonated castor oil as a plasticizer. TTD:9-46.

SLASHING. Arthur E. Silcox (to Saco-Lowell Shops). USP 2 405 908, Aug. 13, 1946.

In winding sized yarn, as it comes from the slasher, onto the loom beam, the beam is driven by 2 friction devices which provide for automatically shifting from the higher speed range to the lower about midway in the building of the yarn body on the beam. TTD:9-46.

Weaving — IV 3

MODERNIZED WEAVING SHED. Anon. *Textile Recorder 64,* No. 759, 51-2, 58 (June, 1946).

Modernization of 2 different mills is briefly described, important features of which modernization are individual motor drives (in place of overhead line-shaft belting) and the regrouping of looms in sets of 4, 6, or 8 to a weaver. TTD:9-46.

WEAVING FACTORY of tomorrow. C. J. Derenberg, S. H. Rawnsley, Ltd. *Fibres, Fabrics & Cordage 13,* 283-4 (July, 1946).

In a discussion of the factory of the future where the comfort of the worker will have been a major consideration in its building, it is pointed out that output per man must remain as the goal of paramount importance. By way of example, it is noted that while Swiss textile machinery is excellent it is very much more expensive than British and can be justified or afforded only by more intensive use, that is by adoption of a 2-shift system. TTD:9-46.

PRACTICAL TEXTILE DESIGNING. Thos. Nelson, Clark Publishing Co., Charlotte, N. C.; 1945; 168 pp.; price $1.25.

Reviewed in *Textile Research J. 16,* 288 (June, 1946). TTD:9-46.

Looms — IV 3 a

ELECTRO-PNEUMATIC LOOM is developed in Brazil. Harold E. Reed. *Textile World 96,* No. 5, 129, 131, 202, 204 (May, 1946).

A new loom (USP 2 377 800 and Brit. P. 555 860), whose harness, picking, and beatup motions are actuated by compressed air cylinders is described and illustrated with photograph and 3 diagrams. A stationary lay and power directly applied to the principal motions are responsible for greatly lessened vibration and allow lighter construction. TTD:9-46.

LOOM TUNING. Economies in loom tuning. Diplomist. *Textile Weekly 37,* 1208, 1210, 1212 (June 21, 1946).

Practical suggestions are given for loom care, particularly important at a time when replacements are difficult. TTD:9-46.

WEAVING. Making of cloth in a worsted loom—II. J. W. Hutchinson. *Fibres 7,* 183-6 (July, 1946).

The construction and operation of the pick finder motion of a Hattersley standard loom are described in detail with the aid of 8 diagrams of the essential parts. TTD:9-46.

HAND LOOM. Peter Florjancic & Emil Boral (to Max Bucher). USP 2 405 782, Aug. 13, 1946.

By means of an improved heald shaft motion, a single pedal lever moves all the shafts or groups of shafts as a whole, thus leaving the operator greater freedom for other operations of weaving. TTD:9-46.

Loom parts — IV 3 b

LOOM SHUTTLE. John J. Kaufmann, Jr. (to Steel Heddle Mfg. Co.). USP 2 403 724, July 9, 1946.

An improved tensioning device for automatically threading shuttles maintains the proper tension on the filling yarn, thus eliminating the tendency of the yarn to foul on tension springs and of lint to collect and pack behind them. TTD:9-46.

LOOM SHUTTLE. Rudolf Schmidt (vested in Alien Property Custodian). USP 2 404 749, July 23, 1946.

The pirns on the hinged 2-arm peg of a loom shuttle have an improved means of support which allows removal from the peg. TTD:9-46.

LOOM SHUTTLE AND BOBBIN. W. L. Williamson. Australian P. 121 758, July 25, 1946.

A bobbin spindle pivoted to the shuttle increases the yarn carrying capacity of the bobbin. TTD:9-46.

Control devices — IV 3 c

LOOM STOP MOTION. Richard E. Bridge. USP 2 403 497, July 9, 1946.

Whenever, during weaving, a perfect shed is not formed (i. e. the twist floats) a spring controlled latch, fitted into a bore in the side of the shuttle, is automatically actuated to stop a loom. TTD:9-46.

STOP MOTION. Fritz Lambach & Walter Siegel (to Robert Reiner, Inc.). USP 2 405 218, Aug. 6, 1946).

An electrical stop motion on a warping or beaming machine is actuated by warp yarn breakage, through a control needle or needles, to stop the warper. TTD:9-46.

Fabric construction — IV 3 d

FABRIC FROM PLIOFILM. Anon. *Chem. Eng. News 24,* 1575 (June 10, 1946).

Washable fabric that is waterproof and scarproof (cannot be scratched with a knife), woven from Goodyear's Pliofilm has many anticipated uses (seat coverings, luggage, brief cases, etc.). TTD:9-46.

RAYON CREPE MARQUISETTE a superior fabric. Anon. *Am. Wool Cotton Reptr. 60,* No. 23, 9-10, 45 (June 6, 1946).

Construction details of a marquisette fabric having a decided crepe construction, are discussed. TTD:9-46.

SEAT COVERING FABRIC. Anon. *Chem. Eng. News 24,* 1574 (June 10, 1946).

Chicopee's Lumite is a stainless seat covering material woven from Saran. TTD:9-46.

TERRY WEAVING. O. Pomfret, Grove Towel Co., Ltd. *Textile Weekly 37,* 970, 972 (May 17, 1946).

Weaving terry cloth is briefly outlined, 2 essentials of which are an additional warp superimposed in the form of loops and a beat-up mechanism for the picks of weft. TTD:9-46.

REPP FABRIC. Maurus Banyai. Can. P. 436 030, July 30, 1946.

A repp fabric consists of standing and covering warps cross-woven, with wefts binding the covering warps on 1 side only. TTD:9-46.

Weave defects — IV 3 e

CREASES formed at loom. H. E. Wenrich. *Rayon Textile Monthly 27,* 359-60 (July, 1946).

Constant checking will not completely eliminate crease defects but will materially help in holding them to a minimum. Polishing of take-up and breast beam rollers is important.
HAM TTD:9-46.

RAYON WEAVING. Diplomist. *Textile Weekly 37,* 1012, 1014, 1016, 1098, 1101 (May 24, June 7, 1946).

Some defects encountered in rayon weaving (missing filaments, stretched places, large knots, soiled places, faulty and loop selvedges, waste material and fluff wrapped in, etc.) are discussed and remedies suggested. TTD:9-46.

WOOL FABRIC DEFECTS due to poor finishing techniques. A. C. Robert. *Textile Age 10,* No. 5, 64, 66, 68, 70, 72-3 (May, 1946).

Streakiness (due to faulty scouring), excessive stretch, and shade variations of cloth are defects discussed. A dry cleaning process, using a chlorinated hydrocarbon solvent, is briefly described and suggested as likely to improve on some of the older scouring and washing methods. TTD:9-46.

WOOLEN FABRIC DEFECTS and finishing processes. Anon. *Am. Wool Cotton Reptr. 60,* No. 26, 73, 75 (June 27, 1946).

Such imperfections in woolen cloth as poor burling, reed marks, misspicks, etc., can be covered up to a large extent by a careful fulling, napping, and scouring; drying, sheering, and wetting-out suggestions are given. TTD:9-46.

Knitting — IV 4

CIRCULAR KNITTING AND ITS DEVELOPMENTS IN GERMANY SINCE 1930. Field Information Agency, Technical, Report No. 330; price 1s 7d.
Listed in *Govt. Publications* (*Great Britain*) (June, 1946). TTD:9-46.

Knitting machines — IV 4 a

KNITTING MACHINE. Post-war Banner wrap-reverse. Alfred L. Hutton, Jr., Hemphill Co. *Knitter 10,* No. 7, 30, 32 (July, 1946).

This fancy hosiery machine, production of which was interrupted by the war, is described as equally efficient for all gages, yarns, and counts, handling wool yarns as well as cotton. TTD:9-46.

KNITTING MACHINE. Herbert N. & Elizabeth E. Smith. USP 2 403 766, July 9, 1946.

An improved looper, or stitch-former, of a knitting machine that does not use the usual beard and latch needles, selectively knits plain and purl stitches, in flat or tubular knitting. TTD:9-46.

KNITTING SEAMLESS HOSIERY. Bert Nyhuis (to Bear Brand Hosiery Co.). USP 2 405 162, Aug. 6, 1946.

In knitting hosiery, particularly seamless nylon, on a circular knitting machine, an air current directed against the fabric as it is being knitted keeps it loosely

extended, thus preventing its tangling and twisting, with the consequent formation of wrinkles.
TTD:9-46.

KNITTING MACHINE. Fritz Lambach (to Robt. Reiner, Inc.). USP 2 405 583, Aug. 13, 1946.

A knitting machine, especially a heeler, has an improved motor drive that automatically changes from low to high speed operation and vice versa, such as is necessary in transferring prefabricated blanks onto the needles. TTD:9-46.

KNITTING MACHINE. Isaac H. C. Green (to Hemphill Co.). Australian P. 121 837, Aug. 8, 1946.

In knitting a pile fabric on a circular knitting machine a body yarn and a pile yarn are fed in a spaced relationship to form terry loops. TTD:9-46.

KNITTING MACHINE. Wm. G. MacDonald & Wm. A. Cooper (to Wm. Cotton, Ltd.). Can. P. 435 842, July 16, 1946.

A welted fabric is knitted on a straight bar knitting machine having a displaceable draw mechanism.
TTD:9-46.

Knitting machine parts — IV 4 b

KNITTING MACHINE SINKERS. Walter Larkin (to Fidelity Machine Co., Inc.). USP 2 403 864, July 9, 1946.

On a circular knitting machine the sinkers and supporting stitch rings have interchangeable partition walls so that the sinkers remain in true vertical planes, thus assuring a uniform stitch. TTD:9-46.

KNITTING MACHINE NEEDLE. Roy C. Amidon (to Vanity Fair Mills, Inc.). USP 2 403 961, July 16, 1946.

An improved knitting machine needle (a modified tongue type) is made in 2 parts joined at the upper part of the needle shank and can be run at very high speeds (500-1000 rpm). TTD:9-46.

KNITTING MACHINE SINKER HEAD. Stanley Gagas. USP 2 405 351, Aug. 6, 1946.

An improved sinker head for a knitting machine adapted to knitting full-fashioned hosiery has removable spacers that may be easily replaced in the event of damage, or changed in order to obtain a different gage.
TTD:9-46.

PICKER MOTION. Bernard T. Cole (to B. Toone (Nottingham) Ltd.). USP 2 405 405, Aug. 6, 1946.

An improved picker mechanism for knitting machines, especially circular, is capable of operating at the rear end of a line of butts instead of at the leading end as heretofore. TTD:9-46.

Control devices — IV 4 c

WARP STOP MOTION. Brian Plunkett (to Celanese Corp. of Am.). USP 2 403 548, July 9, 1946.

On a warp knitting machine a yarn break activates an electrical stop motion to stop the machine.
TTD:9-46.

Fabric construction — IV 4 d

SEAMS. Sewing machine stitch construction. T. S. Whitsel, Union Special Machine Co. *Knitter 10,* No. 7, 46 (July, 1946).

A formula for the calculation of seam strength is presented and discussed. TTD:9-46.

WARP KNITTED FABRIC. R. R. H. Kittel (to Daybrook Fabrics, Inc.). Australian P. 121 879, Aug. 8, 1946.

A fabric equally extensible in all directions is knitted on a machine having 1 needle bar and 2 guide bars.
TTD:9-46.

HOSIERY KNITTING. August A. Sanderson (to Real Silk Hosiery Mills, Inc.). USP 2 405 331, Aug. 6, 1946.

By an improved method a full-fashioned stocking having a well-fitting heel is completely knitted on a flat knitting machine. TTD:9-46.

Pile fabrics — IV 5

GERMAN PILE FABRICS FOR UPHOLSTERY AND WEARING APPAREL. Field Information Agency, Technical, Report No. 463; price 1s 1d.

Listed in *Govt. Publications* (*Great Britain*) (June 1946). TTD:9-46.

Narrow fabrics — IV 6

BRAIDED PACKING. John J. Fiechter. USP 2 404 952, July 30, 1946.

A self-lubricating fibrous packing (of cotton, rayon, or the like) is made from strands which have been impregnated with a lubricant prior to braiding, giving a uniformly impregnated packing material.
TTD:9-46.

SLIDE FASTENER TAPE. Noel J. Poux (to Talon, Inc.). USP 2 405 902, Aug. 13, 1946.

By varying the inner lacings of the weft threads from side to side a permanent fixed radius is secured in stringer tape for slide fasteners. TTD:9-46.

INVESTIGATION OF GERMAN NARROW FABRIC INDUSTRY. Field Information Agency, Technical, Report No. 462; price 1s 1d.

Listed in *Govt. Publications* (*Great Britain*) (June, 1946). TTD:9-46.

Fancy fabrics — IV 7

LACE LIKE FABRICS. Louis N. Feinstein (to Feinstein Knitting Mills). USP 2 403 793, July 9, 1946.

Fabrics such as veiling, hair nets, scarves, and like materials are knit on a knitting machine in a uniform pattern having diamond shaped openings, 2 sides of which are formed of front threads only and the other 2 sides of front and back threads. Cloth thus produced is made at considerably less cost than if done on a lace machine. TTD:9-46.

Fabric processing — IV 8

PREBOARDING NYLON HOSIERY. Wm. Kershaw. *Cotton* (Atlanta) *110,* No. 6, 166, 169-70 (June, 1946).

Three current methods of preboarding are reviewed with the aid of photographs. TTD:9-46.

FABRIC SLITTER. John A. Aycock (to Rock Hill Printing & Finishing Co.). USP 2 400 527, May 21, 1946.

Sheet materials of cloth and paper are slit or score-cut on an improved slitting machine having a positively driven rotary platen roll with coacting circular cutting discs. By imparting a longitudinal movement to the flat roll, grooving of the roll is eliminated and a much softer surface for the roll can be used. TTD:9-46.

FABRIC STRETCHING. Robt. J. Taylor (to Am. Viscose Corp.). USP 2 400 787, May 21, 1946.

Expansible sheet material may be stretched by means of a 4-sided lazy tongs framework. TTD:9-46.

ELASTIC MATERIAL. Theodor J. Boecker (to Herwal Shoe Co., Inc.). USP 2 401 132, May 28, 1946.

An elastic sheet material, especially goring for foot wear, is composed of pleated facing sheet stitched to an elastic backing sheet. TTD:9-46.

FABRIC PROCESSING. Rocco Nazzaro. USP 2 405 665, Aug. 13, 1946.

Fabric in rope form is subjected to liquid treatment (e. g. dyeing, washing, etc.) by passing it through the liquid with the aid of receiving and delivery reels in such manner that undue rubbing, distortion, and other strains are avoided. TTD:9-46.

Fabric applications — IV 9

ELECTRICALLY HEATED MATTRESS. Warren F. Clark. Re. 22 763, June 11, 1946 (USP 2 376 902, May 29, 1945).

An electrically heated mattress, particularly for heat therapy treatment, has a series of electrical resistance wires wrapped around asbestos cores with a covering

of braided material, arranged between asbestos sheets placed above the springs, the mattress being covered, preferably, with a waterproof material. TTD:9-46.

POROUS COATED FABRIC. Thos. G. Hawley, Jr. (to U. S. Rubber Co.). USP 2 400 990, May 28, 1946.

An elastic fabric is made by applying a rubber latex coating to knitted fabric, the porosity of which is retained by first masking certain areas of the fabric by pinching folds of the fabric together and then coating. TTD:9-46.

AVIATOR'S SUIT. Ward T. Van Orman (to Wingfoot Corp.). USP 2 401 990, June 11, 1946.

Fabric of good dimensional stability is of 2 ply pickless construction or square woven, racked, with the cords of 1 ply and the cords of the other ply (or the warp and fill of the racked woven fabric) at an obtuse angle (preferably about 109°) to one another. Such a fabric may be used for an aviator's or a diver's suit (waterproofed if for divers). TTD:9-46.

SEED BED COVER. Ross C. Whitman (to Kendall Co.). USP 2 401 997, June 11, 1946.

An open-mesh woven cover, for seed and plant beds, of increased strength and durability, has a number of fabric patch fasteners around the edges (instead of the usual metal grommets) which are adhesively bonded to the fabric and are not easily pulled out under strain. TTD:9-46.

INTERLINING FABRIC. Ralph N. Fischer (to Am. Cyanamid Co.). USP 2 402 032, June 11, 1946.

An interlining material (e. g. Hymo), having an improved resiliency and increased resistance to shrinkage, is impregnated with a mixture of a water soluble melamine resin and a water insoluble lacquer type resin, heat cured on the fabric. TTD:9-46.

RUBBER COATED FABRIC. Merwyn C. Teague & Paul L. Mahoney (to U. S. Rubber Co.). USP 2 404 758, July 23, 1946.

A porous elastic fabric is formed of a layer of knitted or loosely woven textile fabric and a layer of latex tightly bonded together and made permeable to moisture and air by perforating the rubber layer, while still uncoagulated, with the blunt ends of pins. TTD:9-46.

BANDAGES. Chas. F. Goldthwait (to US Secretary of Agriculture). USP 2 404 837, July 30, 1946.

Extensible cotton fabric, particularly for use in surgical bandages, having differential elastic properties (i. e. elasticity warpwise but not weftwise) is produced by shrinking the fabric in only 1 direction (lengthwise) while tensioning it in the other direction, NaOH being used as the swelling agent. TTD:9-46.

COATED FABRIC. Alfred J. Jennings (to E. I. du Pont de Nemours & Co.). USP 2 405 038, July 30, 1946.

An improved carburetor diaphragm resistant to hydrocarbon fuels is composed of a nylon fabric coated with a thin primer coat of a thermosetting resin and a butadiene-acrylonitrile copolymer and then with a top coating of a synthetic rubber. TTD:9-46.

IRONING COVER CLOTH. Jas. G. Mackechnie, Jr. USP 2 405 703, Aug. 13, 1946.

A durable cover cloth for a hot ironing press (such as is found in laundries and clothes pressing establishments), which is starch-repellent, is made by impregnating a cotton fabric with a mixture of linseed oil, egg white, and a synthetic resin such as ester gum. TTD:9-46.

REENFORCED AIRCRAFT FABRIC. Barnes N. Wallis (to Vickers-Armstrongs, Ltd.). Can. P. 436 014-6, July 23, 1946; Australian P. 121 711, July 25, 1946.

A pressure-tight aircraft cabin has an inner wall lining consisting of a rubberized fabric woven of high tensile steel warp and textile weft threads. TTD:9-46.

CHEMICAL RAW MATERIALS V

Plastics V 1

PLASTIC MONOFILAMENTS. M. R. Radcliffe, Firestone Tire & Rubber Co. *Am. Dyestuff Reptr. 35,* 279 (June 3, 1946).

Some of the characteristics of plastic monofils that recommend them (non-stainability, flameproofness, abrasion resistance, and rotproofness) are briefly considered and 4 steps in their fabrication noted: preparation for extrusion, extrusion, orientation, and conditioning. TTD:9-46.

PLASTICS. Unsupported films and sheetings. C. W. Patton, Bakelite Corp. *Am. Dyestuff Reptr. 35,* 277-8, 282 (June 3, 1946).

The physical properties of plastic films are briefly discussed and 5 methods of manufacture outlined: (1) calendering, (2) solution casting, (3) dispersion casting, (4) solution extrusion, (5) dry extrusion. TTD:9-46.

RESIN COATED FABRIC. Anon. *Textile Colorist 68,* No. 7, 35 (July, 1946).

Athol Mfg.'s Terson is a new upholstery fabric of woven cotton with a synthetic resin plastic coating. TTD:9-46.

RESIN FINISHING. Some new developments in resin finishing. C. S. Jones, *Fibres, Fabrics & Cordage 13,* 290-1 (July, 1946).

Recent developments in synthetic resins for textile finishing are briefly reviewed. TTD:9-46.

TEXTILE RESIN. Anon. *Chem. Industries 58,* 992 (June, 1946).

U. S. Rubber's Kandar is a new resin that imparts crispness to cotton fabrics, eliminating the need for starch. TTD:9-46.

THERMOPLASTICS IN FRANCE. G. C. Bell, M. & B. Plastics, Ltd. *Brit. Plastics 18,* 290-5 (July, 1946).

A survey of the industry includes brief remarks on cellulose acetate, and vinyl resins and their applications to the textile industry. TTD:9-46.

CELLULOSE ETHERS. Wm. J. Burke (to E. I. du Pont de Nemours & Co.). USP 2 398 767, Apr. 23, 1946.

Cellulose ethers containing over 2.0 methallyl groups per glucose unit, useful in preparing fibers, films, plastics, and coating compositions, are produced by reacting at 80-130°C alkali cellulose with a methallylating agent (such as methallyl chloride) in a caustic alkali solution. TTD:9-46.

CELANESE SYNTHETICS FOR ELECTRICAL INDUSTRY. Bulletin of Celanese Plastics Corp.; 20 pp.

Listed in *Chem. Industries 58,* 1126 (June, 1946). TTD:9-46.

CELLULOSE ETHERS, ESTERS, AND MIXED ESTERS AT BIEBRICH (WIESBADEN), ELBERFELD AND DORMAGEN. Field Information Agency, Technical, Report No. 486; price 2s 1d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

Elastomers V 2

SILICONE RUBBER. New developments in silastic—heat-resistant silicone rubber. P. C. Servais, Dow Corning Corp. *India Rubber World 114,* 657-9, 662 (Aug. 1946).

Silastic has the ability to retain rubber-like properties over a temperature range far beyond the limits of natural or synthetic organic rubbers. Silastic is frequently used under conditions where oxidative hardening and weathering affect conventional polymers. Its maximum use is under conditions where inordinately high temperatures would affect organic polymers, such as in gaskets under high temperature applications.
LWR TTD:9-46.

SYNTHETIC RUBBERS. Reference table of synthetic rubbers. H. A. Winkelmann, Dryden Rubber Co. *India Rubber World 114,* 680-1 (Aug. 1946).

The essential constitution, technique of preparation, code numbers, and some physical properties of most of the commercially available synthetic rubbers are tabulated.
LWR TTD:9-46.

Surface-active compounds **V 4**

DETERGENTS. Why not germicidal detergents? Hector C. Borghetty, Gen. Dyestuff Corp. *Rayon Textile Monthly 27,* 369-71 (July, 1946).

The deficiencies of present cleansing agents are noted. Quaternary germicides are useful after washing with soap and rinsing. Biopal G is a new type of cationic germicide which is also a powerful detergent. TTD:9-46.

WOOL DETERGENT. Detergent effective on wool. Anon. *Chem. Eng. News 24,* 1570 (June 10, 1946).

Quaker Chemical's Dianol G is a new detergent and wetting agent for scouring wool fabrics (pH about 9) which dissolves instantaneously in the coldest water and does not produce excessive foaming. TTD:9-46.

TEXTILE AUXILIARY PRODUCTS MANUFACTURE: I. G. FARBENINDUSTRIE, HOCHST. Brit. Intelligence Objectives Subcommittee Report No. 418; price 4s 2d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

TEXTILE AUXILIARY PRODUCTS: MANUFACTURED BY I. G. FARBENINDUSTRIE, LUDWIGSHAFEN. Brit. Intelligence Objectives Subcommittee Report No. 421; price 3s 2d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

TEXTILE AUXILIARY PRODUCTS: MANUFACTURED BY I. G. FARBENINDUSTRIE, MAINKUR WORKS. Brit. Intelligence Objectives Subcommittee Report No. 239; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

TEXTILE AUXILIARY PRODUCTS OF CHEMISCHE FABRIK PFERSEE G. M. B. H., AUGSBURG. Brit. Intelligence Objectives Subcommittee Report No. 420; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

CHEMICAL PROCESSING VI

Preparation **VI 1**

CONTINUOUS CRABBER. Anon. *Textile Age 10,* No. 5, 115 (May, 1946).

A new continuous open width machine for crabbing, washing, soaping, etc., has stainless steel tanks and rolls independent of the frames. TTD:9-46.

DIELECTRIC HEATING analyzed for textile applications. Ralph A. Rusca, Southern Regional Research Laboratory. *Textile World 96,* No. 5, 118-21, 212, 217, 220, 230 (May, 1946).

Textile uses of high frequency currents for drying

are discussed and compared with other industrial applications. Formulas for calculating specific drying requirements are given and explained. Coupling circuits are described and diagrammed. The relatively high costs of dielectric heating for textile mills are considered; they are probably to be justified not alone on the basis of drying results but on that of improving quality or production. TTD:9-46.

GLYCERIN APPLICATIONS. Historical development of textile glycerin applications. W. J. Pickett. *Rayon Textile Monthly 27,* 374-5 (July, 1946).

A historical note which mentions 6 important properties of value in textile processing. TTD:9-46.

RAYON FABRIC STABILIZATION. Recent developments in rayon fabric stabilization. Jack Epelberg, Cluett Peabody & Co., Inc. *Rayon Textile Monthly 27,* 355-6, 405-6 (July, Aug., 1946); *Am. Wool Cotton Reptr. 60,* No. 25, 15-16 (June 20, 1946); *Can. Textile J. 63,* No. 13, 38-40, 49 (June 28, 1946).

The glyoxal process of treating viscose rayon fabrics, which reduces shrinkage to 2% or less, is described. HAM TTD:9-46.

CONDITIONING FIBERS. Hughes L. Siever (to Borne Scrymser Co.). USP 2 405 857, Aug. 13, 1946.

A conditioning liquid (e. g. oils, tints, etc.) is applied to fibers through a reservoir pipe, having a number of nozzles, placed at right angles above the moving mass of textile fibers. TTD:9-46.

PRESHRINKING FABRIC. Frank R. Redman (to Edwin F. James). Can. P. 436 434-5, Aug. 13, 1946.

In a drying and shrinking process fabric is rumpled lengthwise and widthwise in the presence of heat and moisture as it is fed onto a moving belt at a speed greater than that of the belt. TTD:9-46.

Acid baths **VI 4**

TEXTILE FIBER TREATMENT. Geo. W. Seymour & Geo. C. Ward (to Camille Dreyfus). Can. P. 436 021, July 23, 1946.

A mixture of wool and cellulose acetate fibers is immersed in an aqueous bath containing 15-35% ethyl alcohol, and 4-8% H_2SO_4 for 2-20 min. at 20-50°C dried, and baked for 5-30 min. at 100-150°C to carbonize the cellulose acetate fibers and free the wool fibers. TTD:9-46.

Alkali baths **VI 5**

TEXTILE FIBER TREATMENT. Roger U. Genazzani & Geo. C. Ward (to Camille Dreyfus). Can. P. 436 022, July 23, 1946.

Wool and cellulose acetate fibers are immersed for 16 hours at 20°C in an alkaline bath containing 0.2%

NaOH and 15% Na_2SO_4 to carbonize the cellulose fibers, then the fiber mixture is treated with 7% aqueous $AlCl_3$ at 28°C for 10 min., dried, baked at 110°C for 10 min., dusted and rinsed in 1% HCl and in warm water to free the wool fibers.

TTD:9-46.

METHODS FOR STUDY AND CONTROL OF MERCERIZATION. Booklet of Dexter Chemical Corp.

Listed in *Chem. Industries 58,* 1126 (June, 1946). TTD:9-46.

STUDY OF MERCERIZATION PROCESS. Booklet of Dexter Chemical Corp.

Listed in *Chem. Industries 58,* 1126 (June, 1946). TTD:9-46.

Finishing — VI 7

FINISHES. Cloth and chemistry. Anon. *DuPont Mag. 40,* No. 5, 16-17 (Oct.-Nov. 1946).

A brief illustrated note on some DuPont finishes such as Zelan and Aridex. TTD:9-46.

WOOL FINISHING. Some effects of finishing on wool fabric. J. H. Pontefract. *Textile J. Australia 21,* 164-8 (May, 1946).

The hygroscopicity of wool, particularly with respect to regain, is examined. Tests to ascertain the effect of decating (blowing) and pressing upon regain are described and the results tabulated. It was found that decating does not appreciably affect regain but that excessive decating can seriously affect both fabric and fiber strength. In pressing regain is important and careful control of moisture content essential.

TTD:9-46.

CLOTH STRAIGHTENING. Donald M. McSpadden & Jas. Cook. USP 2 400 766, May 21, 1946.

By means of a clamp placed on the edge of the cloth during finishing processes, a turned-in or folded selvedge is straightened out, giving a smooth, unwrinkled appearance to the cloth. TTD:9-46.

FINISHING FABRIC. Ernest B. Benger (to Can. Industries, Ltd.). Can. P. 435 943, July 23, 1946.

Crease resistance and improved resilience are imparted to nylon type fabric by heating to at least 190°C but within 5-25°C below the fusion point of the polyamide fibers. TTD:9-46.

ENZYME PRODUCTS AND ACRISIN FINISHING AGENTS FOR TEXTILE: ROHM UND HAAS, G. M. B. H. DARMSTADT. Brit. Intelligence Objectives Subcommittee Report No. 436; price 2s 2d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

GERMAN FINISH FOR SPUN RAYON FABRICS COMBINING WATER REPELLENCY, CREASE RESISTANCE, AND LOW RESIDUAL SHRINKAGE. Field Information Agency, Technical, Report No. 550; price 7d.

Listed in *Govt. Publications (Great Britain)* (June. 1946). TTD:9-46.

MODERN ORGANIC FINISHES: THEIR APPLICATION TO INDUSTRIAL PRODUCTS. R. H. Wampler. Chemical Publishing Co., Brooklyn, N. Y.; 1946; 452 pp.

Reviewed in *Bull. Inst. Paper Chem. 16,* 584 (Aug. 1946). TTD:9-46.

PRODUCING DURABLE EMBOSSING ON RAYON AND MACHINE FOR COLORING EMBOSSED FABRICS. Field Information Agency, Technical, Report No. 557; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (June, 1946). TTD:9-46.

COLOR — VII

LIGHT AND COLOR in industry. Anon. *Textile Weekly 37,* 1072, 1074 (May 31, 1946).

An exhibition (at Leicester) emphasizes the need for efficient use of color in mills. Colors focus attention, are restful, stimulating, and are useful for identification. TTD:9-46.

Bleaching — VII 1

BLEACHING PROCESSES. Evaluation and comparison of 2 commercial bleaching processes. Jas. H. Kettering & Rita M. Kraemer, Southern Regional Research Laboratory. *Am. Dyestuff Reptr. 35,* 285-7 (June 3, 1946).

A comparison of the kierboil-hypochlorite bleach process with the double-boil hydrogen peroxide-bleach method reveals no appreciable difference in the fabrics produced. However, a slight difference, favoring the latter method, was only to be detected by the more accurate research laboratory method, shown only by fluidities in cuprammonium hydroxide.

TTD:9-46.

CONTINUOUS BLEACHING to include electronic and other modern controls. Brown Instrument Co. *Rayon Textile Monthly 27,* 380 (July, 1946).

A brief survey. TTD:9-46.

BLEACHING. P. W. Painsh (to Lever Bros. & Unilever, Ltd.). Australian P. 121 830, Aug. 8, 1946.

Textile fabrics, yarns, and paper are whitened by treatment with small proportions of a blue-fluorescent substance (such as a hydroxy coumarin) and a blueing agent (such as ultramarine). TTD:9-46

BLEACHING. Geo. P. Vincent (to Mathieson Alkali Wks.). Can. P. 435 996, July 23, 1946.

Cellulosic textile materials are bleached with an alkaline solution (pH 8.7-10) of $NaClO_2$ and a hypochlorite. TTD:9-46.

Dyeing — VII 2

DRUG ECONOMY IN DYE HOUSE. Anon. *Dyer 95,* 587-9 (June 21, 1946).

Advantages and disadvantages of a standing bath are

discussed. The relative inexpensiveness of sulfur dyes may compensate for the wastage from light and medium shades. Economies are suggested in the use of water. TTD:9-46.

DYEING worsted drawing laps. Anon. *Dyer 95,* 595-6 (June 21, 1946).

Dyeing colored and uncolored stock is discussed. The uneven lengths of the strands is a problem, often solved by hacking into convenient sized portions. Dyeing, with or without decolorizing first, is considered from the point of view of matching shades. TTD:9-46.

DYEING CELLULOSE ACETATE. J. Wakelin. *Rayon Textile Monthly 27,* 371-3 (July, 1946).

A general discussion of the dyeing of acetate rayons, with particular reference to anthraquinone dyes. The dyeing of nylon with dispersed dyes is briefly noted. HAM TTD:9-46.

DYEING FORTISAN. Celanese-Fortisan dyeing and printing. A. Mellor. *J. Soc. Dyers Colourists 62,* 168-73 (June, 1946).

The dyeing of celanese plain and crepe fabrics is briefly reviewed. Two methods of processing fabrics for discharge printing are discussed: by saponification and by dischargeable SRA-type dyes. The discharge printing of celanese is briefly reviewed. Fortisan, a regenerated cellulose fiber, had wide use in parachute fabrics. It can be dyed with dyes suitable for cotton and viscose rayon. In printing Fortisan allowance must be made for its lower affinity (about 50% that of cotton). Azo, vat, chrome, and basic dyes are most suitable. TTD:9-46.

DYEING HOSIERY. Better fastness in better hose. O. B. Charles. *Knitter 10,* No. 7, 32, 35-6 (July, 1946).

Two classes of direct dyes that give improved wash and perspiration fastness are discussed, and representative colors in each class listed and briefly described. The first consist of those that are after-treatable with formaldehyde or aldehyde salts; the second, those after-treatable with $CuSO_4$ and acetic acid. TTD:9-46.

SYNTHETIC FIBERS. Dyer's notes. *Dyer 95,* 605, 607, 609 (June 21, 1946).

Some of the difficulties encountered in dyeing acetate rayon crepes are discussed. Marocains are often particularly troublesome to the dyer because of the difficulty of obtaining good penetration. Dyeing acetate rayons in an organic solvent, instead of a water dispersion or a water solution, is one of the methods discussed for accelerating the dyeing. TTD:9-46.

RAYON DYEING. Geo. L. Armour (to Am. Aniline Products Inc.). USP 2 403 900, July 16, 1946.

In dyeing rayon yarns, particularly cellulose acetate, a developing bath is prepared by mixing beta hydroxynaphthoic acid with sodium formate dry, and then adding hot water, at about 85-100°C. The pH of the developer is kept at about 5-6 without the dangers, as formerly, of alkalizing. TTD:9-46

CONTROL OF DYEING. Geo. L. Royer & Edwin I. Stearns, Jr. (to Am. Cyanamid Co.). USP 2 405 167, Aug. 6, 1946.

The dyeing operation is carefully regulated through accurate control of temperature and pressure in the dye chamber, an important feature of which is the rapid discharge of the treating liquid and the inflow of washing water. TTD:9-46.

DYEING CELLULOSE ACETATE. Herbert Platt & Cyril M. Croft (to Celanese Corp. of Am.). USP 2 405 669, Aug. 13, 1946.

With an improved dye jig, which permits dyeing fabric in open width, thus avoiding creasing, fabrics containing thermoplastic yarns, particularly cellulose acetate, are dyed with high temperature (above 70°C) dyes. Uniform dyeing, wider range of dyes, and increased speed of dyeing are effected. TTD:9-46.

VAT DYEING MACHINE. Frederick Carter & Donald C. Taylor. Can. P. 436 027, July 30, 1946.

An improved vat dyeing machine has a slide mechanism supporting a thread guide for moving from one vat to another. TTD:9-46.

VAT DYEING. Cyril M. Croft & Walter H. Hindle (to Camille Dreyfus). Can. P. 436 433, Aug. 13, 1946.

To dye a uniform solid shade, cellulose acetate material is impregnated with an ethyl alcohol solution of a vat dye containing about 70 wt.% alcohol, dried at about 200°F, and the vat dye oxidized. TTD:9-46.

Printing VII 3

APPLICATION OF PIGMENT COLORS. Winn W. Chase, Aridye Corp. *Can. Textile J. 63,* No. 12, 44-7 (June 14, 1946).

The 4 principal systems of applying pigment colors to textiles are outlined and discussed: (1) aqueous-dispersion, (2) solvent-dispersion, (3) water-in-oil emulsion, and (4) oil-in-water emulsion. TTD:9-46.

CLEAN PRINTING ROLLERS. Suggestions for handling doctor blade troubles. J. H. Downey. *Textile Age 10,* No. 5, 54, 59-60, 62, (May, 1946).

Manipulation and adjustment of doctor blades (for cleaning engraved copper rollers during the textile printing process) are discussed. TTD:9-46.

PRINTING. Review of recent developments in printing. Paul L. Meunier, E. I. du Pont de Nemours & Co. *Am. Dyestuff Reptr. 35,* 309-10 (June 17, 1946).

The printing of nylon with acid, direct, and vat colors is discussed. The applications of the pad-steam process to fixation of vat colors are also considered. TTD:9-46.

DYE PRINTING. Chester A. Amick (to Am. Cyanamid Co.). USP 2 404 769, July 30, 1946.

Cellulosic material may be directly dye printed without mordanting by the planographic method, instead of the intaglio, using a putty composition containing a carbohydrate gum such as dextrin (45-65%) and an amide such as ureathiourea, and melamine (about 6-25%). TTD:9-46.

DYE PRINTING PASTE. Roy H. Kienle & Chester A. Amick (to Am. Cyanamid Co.). USP 2 405 151, Aug. 6, 1946.

An assistant for a printing paste (particularly a thioindigo vat dye) consisting of an arylamine salt of a quinone-sulfonic acid, produces a strong clean print. This assistant may be blended directly in the printing paste or incorporated into the thickener or (preferably) into the dye paste or powder during manufacture. TTD:9-46.

Color measurement **VII 4**

COLOR: of heart and of mind. Edwin B. Brown, R. I. School of Design. *Am. Dyestuff Reptr. 35,* 300-3 (June 17, 1946).

The emotional effect of colors upon individuals and their favorable and unfavorable reactions to different colors are discussed, particularly with reference to the scientific consideration of color. TTD:9-46.

PROOFING VIII

Waterproofing **VIII 1**

WATER REPELLENCY. Army's water repellent clothing. J. E. Simpson, Office QMG. *Am. Dyestuff Reptr. 35,* 243-52, 272, 288-90 (May 20, June 3, 1946).

Principal features of the army's work in developing water repellent clothing, particularly as regards the types of tests used, are described. Field tests are illustrated and discussed in some detail. TTD:9-46.

WATER REPELLENCY. Drop-penetration apparatus for evaluating water repellent fabrics. Arnold M. Sookne, Francis W. Minor & Milton Harris, Milton Harris Associates, & J. E. Simpson, Office QMG. *Am. Dyestuff Reptr. 35,* 295-8, 307-8 (June 17, 1946).

The resistance of cotton flat fabrics to hard rainfall, as simulated by drop-penetration apparatus, is tested and the results correlated with those obtained in hard natural rain. It is shown that tests of resistance to hydrostatic pressure may not give an accurate estimate of resistance to drop penetration. TTD:9-46.

Rotproofing **VIII 3**

ROTPROOFING. Mildew and rot resistance of textiles and effectiveness of textile fungicides. Anon. *Am. Dyestuff Reptr. 35,* 274-6, 282 (June 3, 1946).

Tentative test methods (3rd revision) to determine the behavior of textiles with respect to mildew and to evaluate mildew preventives are outlined in some detail. TTD:9-46.

MILDEWPROOFING. Wm. P. ter Horst (to U. S. Rubber Co.). USP 2 401 028, May 28, 1946.

Cellulosic fabrics, particularly cotton, are mildewproofed by impregnation with a solution of phenanthraquinone-9, 10, applied in solution in a suitable solvent or in suspension in a nonsolvent liquid such as water. TTD:9-46.

Flameproofing **VIII 4**

FLAMEPROOFING TEXTILES. New circular describes flameproofing of textiles. Anon. *Tech. News Bull. Natl. Bur. Standards* No. 353, 70 (Sept. 1946).

Along with a review of the principles of flameproofing an outline of testing methods and requirements and a brief history of researches are given in Circular C455. TTD:9-46.

Shrinkproofing **VIII 6**

NONFELTING WOOL. Archibald J. Hall & Frederick C. Wood (to Tootal Broadhurst Lee Co., Ltd.). USP 2 401 479, June 4, 1946.

A nonfelting treatment for wool consists in applying a caustic alkali in a monohydric alcohol solution to the fibers, yarn, or fabric at a temperature below 60°C. TTD:9-46.

TESTING AND ANALYSIS IX

BIBLIOGRAPHIES on textile processing. III-Textile testing. Anon. *J. Soc. Dyers Colourists 62,* 181 (June, 1946).

A select bibliography has 15 references. TTD:9-46.

LABORATORY CONTROL improves mill operation. Horace L. Pratt. *Textile World 96,* No. 5, 133, 135, 137, 139, 204, 206, 208, 212 (May, 1946).

The 2 main functions of a laboratory are check testing (end products) and control testing (manufacturing processes). Check methods and equipment are discussed and report forms described and illustrated. TTD:9-46.

Fiber testing **IX 1 a**

PROPERTIES OF FIBERS. Correlation of equilibrium moisture data. John C. Whitwell & Richard K. Toner, Textile Research Inst. & Princeton Univ. *Textile Research J. 16,* 255-67 (June, 1946).

A generalized study of the moisture regain properties of textiles is in progress. Equilibrium regain data on fibers when represented on an Othmer type plot give lines of constant regain which meet when extended by statistical calculation. Thus the sorption process has a common point; its location is related to the desorp-

tion process when multiplying by a simple factor. Heat effects in sorption and desorption processes can be calculated from the Othmer plots of the regain lines. A comparison of moisture behavior for elastic (fiber) gels and inelastic gels (e. g. silica gel) reveals no distinction; but solutions differ from gels in moisture equilibrium regain characteristics. Related factors in the performance of breaking strength and testing fabrics are discussed.

LWR TTD:9-46.

COTTON FIBER SAMPLE. Kenneth L. Hertel (to Univ. of Tennessee Research Corp.). USP 2 404 708, July 23, 1946.

A sample of cotton fibers is prepared for optical analysis by collecting the fibers at random from a mass of ginned cotton with the aid of a pair of combs, by which the fibers are arranged in parallel relation ready for analysis and measurement of fiber length.

TTD:9-46.

COTTON FIBER TESTING methods demonstrated. John T. Wigington, Cotton Textile Inst. *Am. Wool Cotton Reptr. 60,* No. 20, 55, 57, 59, 61, 63, 65, No. 26, 59, 61, 63 (May 16, June 27, 1946).

Testing methods are explained and equipment demonstrated at a division meeting of the STA followed by a discussion in which it was stated that cotton character was dependent upon 4 factors: length, strength, fineness, and maturity. TTD:9-46.

FIBER IDENTIFICATION. Modern testing laboratory II. Fiber identification and testing equipment. Walter S. Sondhelm. *Textile Recorder 64,* No. 759, 49-50 (June, 1946).

Laboratory equipment, particularly for fiber identification and testing, is suggested and includes microscope, microtome, a Baer sorter, etc. TTD:9-46.

RESULTS OF FIBER AND SPINNING TESTS FOR SOME VARIETIES OF COTTON GROWN IN U. S., CROP OF 1945. USDA Production & Marketing Administration; 1946; 33 pp. TTD:9-46

Yarn testing — IX 1 b

YARN NUMBERS. Time saver for yarn number determinations. Wm. Brazelton, Westinghouse Electric Corp. *Textile Age 10,* No. 5, 88 (May, 1946).

A brief description, with graphs, of the ASTM formula for determination of yarn numbers along with a method for converting to the metric system.

TTD:9-46.

EFFECTS OF TEMPERATURE AND HUMIDITY ON CELLULOSIC MATERIALS WITH SPECIAL REFERENCE TO TIRE CORD, LIST OF REFERENCES (WITH LIST OF SOURCES CONSULTED). John M. McNeill, USDA Library; 1946; 9 pp. TTD:9-46.

Fabric testing — IX 1 c

FABRIC STRENGTH. Comparison of strip and grab breaking strength of two classes of upholstery fabrics. Bess V. Morrison & June C. Wilbur, USDA Bureau of Human Nutrition & Home Economics. *Rayon Textile Monthly 27,* 361-3 (July, 1946).

A description, with 3 tables and 4 graphs, of results obtained by the 2 standard methods of determining tensile strength of fabrics.

HAM TTD:9-46.

FABRIC TESTS. Determination of statistical control and related factors in performance of breaking-strength testing of fabrics. Norman B. Edelman. Philadelphia QM Depot, *Textile Research J. 16,* 268-74 (June, 1946).

Test results obtained by 50 operators, on measuring the breaking-strength of a fabric, are studied. About a fourth of the operators that were found to be out of statistical control had not met 2 requirements, of considerable experience and continual performance in textile testing. One-third of all the breaks were jaw breaks and were shown to give variable strength and power, average strengths and acceptable breaks, indicating the jaws of test machines are an important factor and that the jaw pressure should be known and regulated. However, good operators get practically the same number of jaw breaks as those out of control and do not necessarily get higher breaking-strengths.

LWR TTD:9-46.

PHYSICAL PROPERTIES OF KNITTED FABRIC made of natural and synthetic fibers. Hazel M. Fletcher. USDA Bur. of Human Nutrition & Home Economics. *Rayon Textile Monthly 27,* 309-12, 364-7 (June, July, 1946).

Tests made on 13 knit fabrics (of cotton, wool, silk, linen, nylon, and acetate, cuprammonium, and viscose rayon) to determine durability are described and results tabulated. Bursting strength, elongation, compressional resilience, water absorption, abrasion resistance, thermal transmission, air and vapor permeability were the physical properties examined. Test results are shown in 6 tables and 8 graphs.

HAM TTD:9-46.

SHRINKAGE TESTING. Elimination of chaos from shrinkage testing. Anon. *Textile Colorist 68,* No. 7, 18-19, 41 (July, 1946).

An open forum discussion is reported.

TTD:9-46.

TESTING FABRIC COOLNESS. Technique for evaluating coolness of summer clothing. Anon. *Rayon Textile Monthly 27,* 368 (July, 1946).

A method of evaluating the coolness factor of fabrics used for summer wear is described.

HAM TTD:9-46.

WOOL FABRIC ABRASION RESISTANCE. Measurement of damage in wool materials. III-Degree of modification produced by treating wool fabrics with buffered acid and alkaline solutions. C. S. Whewell & D. M. Bee, Leeds Univ. *J. Soc. Dyers Colourists 62,* 178-80 (June, 1946).

Measurements made on a lightweight flannel from tests on a Ring Wear tester show that processing should be carried out at pH 5-7. From tests at various temperatures with buffered solutions of pH 1-12 it was found that residual acid or alkali reduced fabric resistance to wet abrasion. TTD:9-46.

PERMEABILITY OF FABRIC. Geo. J. Brabender. USP 2 400 481, May 21, 1946.

Apparatus for simultaneously testing the water vapor permeability of 2 test specimens is suitable for paper, cellophane, cellulose acetate, vinyl resin films, ethylcellulose films, rubber, and the like. Its small internal volume minimizes the effect of barometric changes or waves, and the cell is such that it can be easily accommodated on an analytical balance. TTD:9-46.

Dye testing — IX 1 d

PROGRESS REPORT ON TESTS IN COMMERCIAL FISHERIES OF CORDAGES MADE FROM VARIOUS FIBERS. Frank E. Firth. U. S. Dept. Interior, Fish & Wild Life Service; Leaflet No. 177; 1946; 7 pp. TTD:9-46.

Chemical analysis — IX 2

ANTIPERSPIRANTS AND FABRICS. Action of antiperspirant creams on fabrics. Ruth R. Bien, Good Housekeeping Bureau. *Am. Dyestuff Reptr. 35,* 269-71, 290-1 (June 3, 1946).

From tests made on cotton, linen, viscose rayon, acetate rayon, silk, and wool under different conditions of time, temperature, and humidity it was found that silk, wool, and acetate rayon were highly resistant to the action of antiperspirant creams, while linen, cotton, and viscose rayon were quite vulnerable, the greatest damage being caused by ironing without preliminary laundering. TTD:9-46.

CARBOHYDRATE TEST. Qualitative test for carbohydrate material. Roman Dreywood, Eastman Kodak Co. *Ind. Eng. Chem. Analyt. Ed. 18,* 499 (Aug. 1946).

A solution of anthrone in concentrated H_2SO_4 gives a permanent green coloration with carbohydrates. A positive test was obtained for 18 carbohydrate materials including several cellulose derivatives. Furfural is the only noncarbohydrate to give a green coloration; but if the solution is diluted with 50% H_2SO_4 or glacial acetic acid, the brown precipitate which forms distinguishes furfural from carbohydrates. The latter remain green even at extreme dilutions.
LGO TTD:9-46.

COMPOSITION OF CELLULOSE ESTERS. Chas. R. Fordyce, Leo B. Genung & Mary Alice Pile, Eastman Kodak Co. *Ind. Eng. Chem. Analyt. Ed. 18,* 547-50 (Sept. 1946).

Equations and nomographs are given for cellulose acetates, propionates, butyrates, acetate-propionates, and acetate-butyrates. By calculations using the equations or reading directly from the nomographs the % acetyl, propionyl or butyryl in the cellulose esters can be converted to the number of acetyl, propionyl, butyryl, and hydroxyl groups per anhydroglucose unit.
LGO TTD:9-46.

MODIFIED ALKOXYL ANALYSIS. Determination of ethers and esters of ethyleneglycol. Paul W. Morgan, E. I. du Pont de Nemours & Co. *Ind. Eng. Chem. Analyt. Ed. 18,* 500-4 (Aug. 1946).

The Zeisel alkoxyl method is modified by use of a standard Br solution to absorb the ethylene formed by decomposing the ethyleneglycol residue with HI. The alkyl iodide (RI) is absorbed in $AgNO_3$ and determined by the Volhard method. The ethyleneglycol ether or ester content, calculated as C_2H_4O, is obtained from the sum of the RI and olefin determinations. Results are given for the analysis of a number of hydroxyethylcellulose derivatives, useful in sizing or finishing textiles.
LGO TTD:9-46.

RESILIENCE IN TEXTILES. Some remarks about resilience of textile materials. H. Mark, Polytechnic Inst. of Brooklyn. *Textile Research J. 16,* 361-8 (Aug. 1946).

Three factors are held to be of prime significance in determining the resilience of fibers or textile materials: (1) the average length and diameter of the fibers, (2) the chemical nature of the material, (3) the degree of order in the texture of the fibers. A very complex and delicate balance is considered necessary among the 3 states of polymers (i. e., crystalline, rubbery, and liquid) before a fiber can become resilient, its degree of resilience depending upon the balance among the states. Generally, the filament having a crystalline skin and a rubbery core will be less desirable than one having a highly crystalline and oriented core and a rubbery skin. Such balances can only be set up through empirical procedures.
LWR TTD:9-46.

TESTING COATED FABRICS. Some pitfalls in accelerated testing. R. E. Thomas, E. I. du Pont de Nemours & Co. *Am. Dyestuff Reptr. 35,* 280-2 (June 3, 1946).

The technician is cautioned against easy acceptance of data obtained from accelerated testing devices before actual service test data are at hand for comparison. TTD:9-46.

TEXTILE CHEMICALS ANALYSIS. Analysis of oil-soluble petroleum sulfonates. Francis Brooks,

Edw. D. Peters & Louis Lykken, Shell Development Co. *Ind. Eng. Chem. Analyt. Ed. 18,* 544-7 (Sept. 1946).

A relatively simple extraction-adsorption method is given for the determination of mineral oil, sulfonic acid soap, carboxylic acid soap, free alkali, and inorganic salts in oil-soluble petroleum sulfonates.
LGO TTD:9-46.

HAZARDS XII

MILL ACCIDENTS. Causes of accidents in Ontario textile mills. Anon. *Can. Textile J. 63,* No. 13, 41 (June 28, 1946).

The number of accidents and their causes are tabulated and discussed in a report of the Accident Prevention Ass'n. TTD:9-46.

TEMPERATURE AND CLOTHING. Scientific facts on room temperature and clothing. W. Schweisheimer. *Rayon Textile Monthly 27,* 367-8 (July, 1946).

Some old and new facts are presented about the relation of fabrics to skin temperatures and insulating effect of garment materials against heat, cold and sunlight. Physiologically the 2 sexes do not differ in their needs for protection against the elements.
HAM TTD:9-46.

TEXTILE MILLS XIII

Mill buildings XIII 1

MILL CHIMNEY. John W. Hoult. *Textile Weekly 37,* 1214 (June 21, 1946).

The need for repairs to mill chimneys, often suffering from years of neglect, is emphasized. TTD:9-46.

MILL MAINTENANCE. Anon. *Textile World 96,* No. 5, 150 (May, 1946).

Mill floors are quickly and easily renovated, without use of soap or chemicals, by means of a new dry cleaning method that is briefly described and illustrated. TTD:9-46.

MILL MAINTENANCE. Southern textile men meet in Raleigh. Anon. *Cotton* (Atlanta) *110,* No. 6, 98, 100 (June, 1946).

A round table discussion on methods of cleaning, floor maintenance, overhauling, and roll pickers. TTD:9-46.

Mill machinery XIII 2

CLEANING OF MACHINERY in cotton mills. Anon. *Am. Wool Cotton Reptr. 60,* No. 23, 11-12, 46, No. 26, 65, 67, 69, 71, 75 (June 6, 27, 1946).

At a round table conference of the Eastern Carolina Division of the STA there is discussion of how, when, and by whom machinery is cleaned. TTD:9-46.

COMPRESSOR ROOM. Beaumont's modern compressor room. Anon. *Cotton* (Atlanta) *110,* No. 6, 71 (June, 1946).

A modern compressor room, briefly described and illustrated, contains 2 Gardner-Denver (20 x 13 and 14 x 13) and 2 Pennsylvania (19 x 13 and 17 x 11) compressors. TTD:9-46.

MACHINERY. Warping, weaving, and dyeing machinery. Anon. *Textile Recorder 64,* No. 759, 45-6 (June, 1946).

The Benninger automatic loom, high speed warper, and dye winch, which were among the textile machinery shown at the Basle fair, are described and illustrated. TTD:9-46.

Mill power XIII 3

POWER TRANSMISSION an important factor in cost and quality of textiles. Henry Miedendorp. *Rayon Textile Monthly 27,* 377-9 (July, 1946).

Care and maintenance of bearings and power drives, particularly as regards lubrication, are discussed, and suggestions given. TTD:9-46.

STEAM POWER. Notes by dye-house engineer. *Dyer 95,* 557, 559 (June 7, 1946).

Periodic inspection of water storage tanks is urged. The mechanical efficiency of an engine is discussed and illustrated by an equation. Cautions are given against working on steam pipes under pressure. TTD:9-46.

Mill materials XIII 4

MILL MATERIALS HANDLING. Stepping-up P. M. H. Anon. *Textile Weekly 37,* 1166, 1168 (June 14, 1946).

The use of electric trucks for handling textile mill materials is an important means of increasing the production per man hour. TTD:9-46.

Mill lighting XIII 5

FLUORESCENT LIGHTING. Anon. *Textile Weekly 37,* 1164 (June 14, 1946).

A modernized lighting installation at a Huddersfield mill is briefly described and illustrated. TTD:9-46.

COLOR AND LIGHTING IN FACTORIES AND OFFICES. Brit. Color Council, London; 1946; price 8s.

Reviewed in *Can. Textile J. 63,* No. 12, 14, 16 (June 14, 1946). TTD:9-46.

Atmospheric control XIII 6

AIR CONDITIONING. "Nylon weather" achieved by refrigerated air conditioning. C. Mallard Bowden. *Textile World 96,* No. 5, 116-17 (May, 1946).

By installation of a central-station system of tempera-

ture and humidity control (so called nylon weather) at Hudson Hosiery Mills, hosiery rejects are found to be greatly reduced and seaming is made easier. Standard nylon weather is given as: 80°F and 55% rh (68% rh for throwing). TTD:9-46.

AIR CONDITIONING explained. F. Wright, Sturtevant Engineering Co., Ltd. *Textile Weekly 37,* 874, 876, 878, 910, 912, 914, 974, 976 (May 3, 10, 17, 1946).

A lecture in which it is emphasized that humidification chiefly distinguishes mill ventilation and air conditioning. The Preciprotron (an electrostatic filter) is described as the most efficient air filter obtainable today. TTD:9-46.

PRINCIPLES OF AIR CONDITIONING. John Duerst, Clark Thread Co. *Cotton* (Atlanta) *110,* No. 6, 78-9 (June, 1946).

Some important air conditioning facts are briefly outlined and a sample problem in air conditioning presented. TTD:9-46.

Process control — XIII 7

NEW TYPE pH METER. Anon. *Rayon Monthly 27,* 383 (July, 1946).

Pfaltz and Bauer's inexpensive meter is completely line-operated and does not need dry cell batteries. TTD:9-46.

STEAM GAGES. Check list for steam gages in textile mill usage. Ernest W. Fair. *Rayon Textile Monthly 27,* 381 (July, 1946).

Checks on gages are a necessary part of routine maintenance. TTD:9-46.

Water supply — XIII 8

WATER. Random notes on water characteristics. Arthur N. Patterson, S. Stroock & Co., Inc. *Rayon Textile Monthly 27,* 376 (July, 1946).

A brief review discusses hardness, color, and organic matter in water. TTD:9-46.

BASIC SCIENCES — XIV

ALCOHOLYSIS OF CELLULOSE. Richard E. Reeves, Wilhelmina M. Schwartz & Joel E. Giddens, Southern Regional Research Laboratory. *J. Am. Chem. Soc. 68,* 1383-5 (July, 1946).

From an investigation of cellulose alcoholysis it is found that while degradation appears more rapid by alcoholysis than by hydrolysis nevertheless, about the same upper limit of fluidity is reached in each instance. TTD:9-46.

CELLULOSE SOLUTIONS. Convenient adjustment to a standard velocity gradient of the fluidity of anomalous cuprammonium solutions of cellulose. Carl M. Conrad & Verne W. Tripp. Southern Regional Research Laboratory. *Textile Research J. 16,* 275-83 (June, 1946).

The logarithmic slopes relating fluidity and velocity gradients at low fluidities of undegraded cellulose are very steep. As the fluidity of any particular mean velocity gradient increases with progressive degradation, the slopes decrease until at a little over 30 rhes the anomalous behavior disappears; and an equation is derived which relates the logarithmic slope of the fluidity-velocity gradient curve for cuprammonium solutions of cellulose containing 0.5 g/ml to the fluidity at 50 reciprocal seconds. This equation can be modified to give the fluidity of cuprammonium solutions containing the same concentration of cellulose at a gradient of 500 reciprocal seconds from a single pair of fluidity and velocity gradient values at any other gradient within the practical range for measurement. A chart is suggested for the convenient approximate adjustment of fluidities to a common velocity gradient of 500 reciprocal seconds.
LWR TTD:9-46.

CELLULOSE STUDIES. IV. Chemical structure of cellulose and starch. Eugene Pacsu & Lejaren A. Hiller, Jr. Textile Foundation & Princeton Univ. *Textile Research J. 16,* 243-8 (June, 1946).

New structures for cellulose and starch are proposed to account for traces of glucose, cellobiose, cellotriose, and the like in cellulose or glucose, maltose and probably maltotriose in starch as related to viscosity in solution. The relation between number of terminal reducing groups and viscosity of cellulose in phosphoric acid is such that the observed large changes in the viscosity cannot be ascribed to hydrolysis or true glycosidic bonds. The optical rotation of freshly prepared cellulose solutions as compared with glucose gives further evidence. The new cellulose formula postulates the conventional long molecular chains with semiacetal linkages of glucose, cellobiose, cellotriose, etc. Starch granules are visible molecules made up in a 3-dimensional network of chains with semiacetal linkages at about the 20th or 25th glucose unit. Since the semiacetal linkage is extremely unstable toward oxonium ions, both cellulose and starch undergo rapid degradation at very low acid concentrations.
LWR TTD:9-46.

MECHANICAL PROPERTIES OF TEXTILES. III. Sydney Katz, Geo. Halsey & Henry Eyring Textile Research Inst. *Textile Research J. 16,* 284-5 (June, 1946).

Supplementary data presented in connection with original article of this title (See p. 203, TTD:4-46). Stress-strain experiments and various rates of loading on viscose yarn are analyzed on the basis of the 3-element non-Newtonian model. The analysis is held to be well within the experimental error of this type of experiment.
LWR TTD:9-46.

VISCOMETRY. Theory and application of the parallel plate plastometer. G. J. Dienes & H. F. Klemm, Bakelite Corp., New York, N. Y. *J. Applied Physics 17,* 458-71 (June, 1946).

Viscometry of plastics in the range of 10^4 to 10^9 poises by means of a parallel plate viscometer is based on a mathematical method for separating viscous from elastic components of the deformation. Plate separation is measured as a function of time at a given temperature. (The rate of shear is low, approximately 0.1 sec^{-1}.). Viscosity-temperature behavior of polyethylene and vinyl chloride-acetate resins follows the relation: log of viscosity varies linearly with reciprocal of average temperature. The instrument is useful for empirical determination of average molecular weights of polymers.

EKF TTD:9-46.

ELECTRON MICROSCOPE. E. F. Burton & W. H. Kohl, Reinhold Publishing Corp., New York City; ed. 2; 1946; 325 pp.; price $4.00.

Reviewed in *Textile Research J. 16,* 288 (June, 1946). TTD:9-46.

INTRODUCTION TO INDUSTRIAL MYCOLOGY. Geo. Smith, Edw. Arnold & Co. London; ed. 3; 1946; 285 pp.; price 20s.

Reviewed in *Endeavour 5,* 123 (July, 1946). TTD:9-46.

THEORY AND PRACTICE OF FILTRATION. Geo. D. Dickey & Chas. L. Bryden, Reinhold Publishing Corp., New York City; 1946; 346 pp.; price $6.00.

Reviewed in *Rayon Textile Monthly 27,* 333 (June, 1946). TTD:9-46.

TEXTILE RESEARCH XV

CANADA'S TEXTILE INDUSTRY. W. G. E. Aird, Montreal Cottons, Ltd. *Cotton* (Atlanta) *110,* No. 6, 63-6 (June, 1946).

A general survey of the Canadian textile industry. TTD:9-46.

GERMAN TEXTILE TECHNOLOGY can advance US industry. Anon. *Textile World 96,* No. 5, 101-15 (May, 1946).

In a survey of the work of the Technical Industrial Intelligence Committee teams there are listed the investigating personnel and over 75 reports, followed by brief summaries of finishing, spinning synthetics, jig dyeing, sizing synthetic fibers, PeCe fiber, ring spinning, textile printing, wool dyeing, circular interlock knitting, and screen printing. TTD:9-46.

INDIAN COTTON INDUSTRY. Proposed expansion of cotton textile industry. Dharamsey M. Khatau. *Indian Textile J. 56,* 694-716 (May, 1946).

A comprehensive survey, with recommendations, of the Indian Textile Industry is made by a Government of India Postwar Planning Committee (Textiles). A 25% increase in number of spindles in India is recommended and approved. TTD:9-46.

INDUSTRY AND RESEARCH. Firm with a research department. Modernization of processes and plant. How new industries arise. P. Dunsheath, W. T. Henley's Telegraph Works, Ltd.; C. H. Davy, Babcock & Wilcox, Ltd.; R. E. Slade, I. C. I., Ltd. *Textile Mfr. 72,* 228-9, 232 (May, 1946).

A symposium at a conference of the Federation of British Industries held in London. TTD:9-46.

RESEARCH AND ECONOMICS. Paul G. Weiller. *Instruments 19,* 505-8 (Sept. 1946).

Future progress will depend upon research rather than advertising. Why, then, is so much more money spent on advertising? Methods of obtaining the highest return on research money are as follows: (1) Distinguish carefully between research and trouble shooting. (2) Use all existing knowledge before attempting a project. (3) Study the proposed project in terms of the operation as a whole: it may be more economical to change an entire operation than to study possible changes in a part. (4) Determine whether a job is to be finished regardless of the cost or not; this saves costs of partially completed projects. (5) Assign workers and money as rapidly as developments on a project indicate, rather than on a fixed predetermined schedule.

LCL TTD:9-46.

RESEARCH INSTITUTE. Research progress at Midwest Research Institute. Harold Vagtborg, Midwest Research Inst. *Chem. Eng. News 24,* 1183-91 (May 10, 1946).

In a summary of the President's report of the first year of operation, work on development of agricultural fibers is briefly noted. TTD:9-46.

TEXTILE ETYMOLOGY. Random notes in textile etymology. Wm. F. Leggett. *Textile J. Australia 21,* 140-1, 169 (May, 1946).

A brief discussion on nomenclature. Greece, Rome, China, India, France, Persia, Egypt, and other countries have contributed to the naming of textiles. TTD:9-46.

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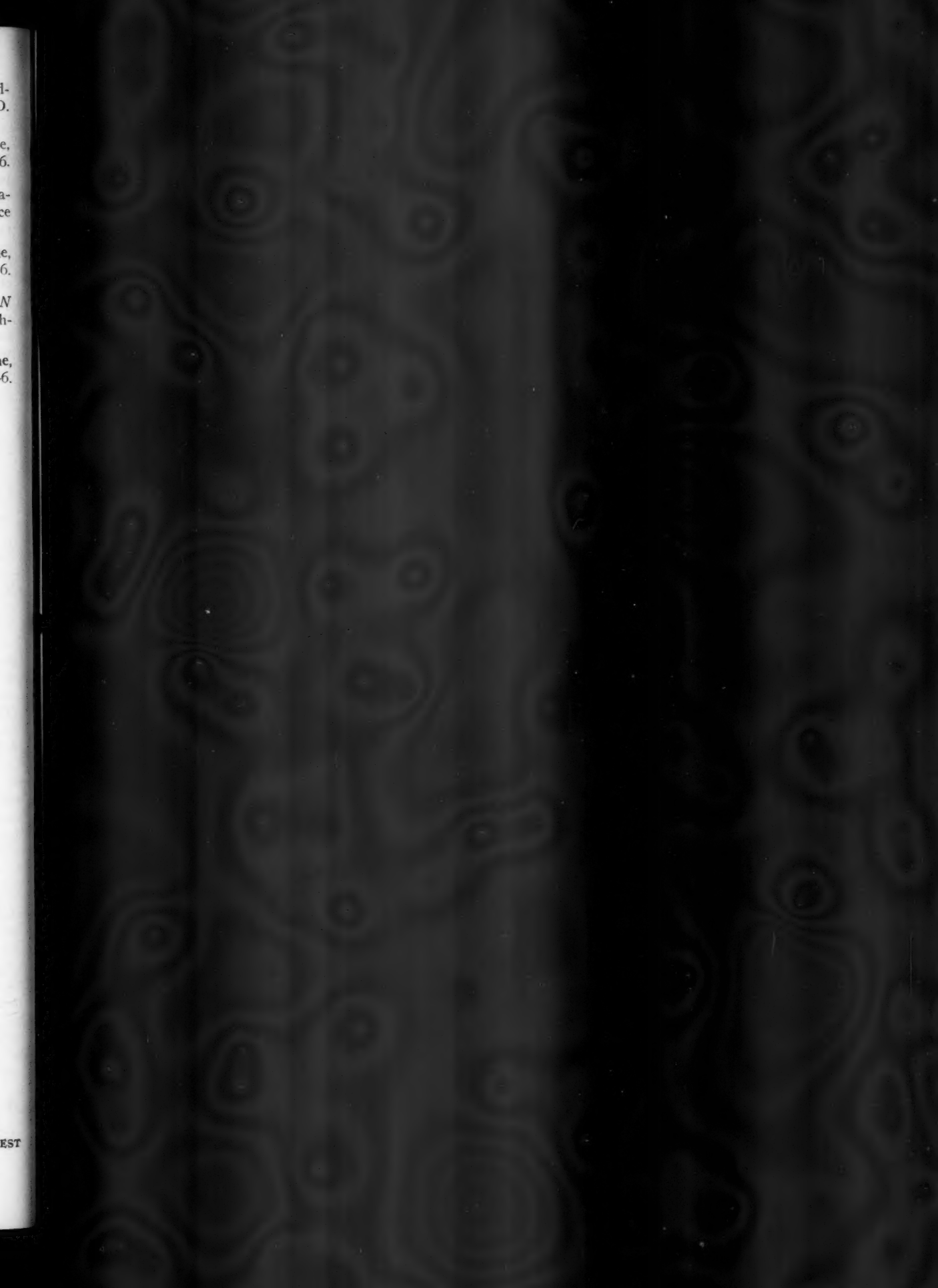
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